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## ICT-BASED INSTRUCTION FOR SPECIALISED VOCABULARY DEVELOPMENT

Ana Bocanegra Valle  
M.<sup>a</sup> Dolores Perea Barberá  
*Universidad de Cádiz (Spain)*

**ABSTRACT:** This paper focuses on the teaching and learning of specialised vocabulary through Information and Communication Technologies (ICTs) in general and, more precisely, on computer-supported teaching and learning of Maritime English (ME) vocabulary. It first addresses the potential contribution of ICTs in view of enhancing lifelong learning and autonomising ESP learners. Next, it explores the relationship between ICTs and specialised vocabulary development. Finally, it focuses on the Glossary tool contained in the Moodle platform at the University virtual campus to present and discuss its application for the teaching/learning of ME vocabulary.

**Keywords:** Computer-assisted instruction, specialised vocabulary, lifelong learning.

## INTRODUCTION

The implementation of the Bologna reform in European universities is gradually leading to a change in the methodologies used in formal settings. On the one hand, teachers are urged to abandon the traditional idea of being considered the major source of information and knowledge, to adopt new roles within the teaching/learning process (facilitator, counsellor, guide, etc.) and embed Information and Communication Technologies (ICTs) in their courses, either in their everyday classroom work or as a complement to face-to-face sessions. On the other, learners have to change their attitudes towards formal teaching/learning, accepting an active role in their own learning processes and tackling potential ICT illiteracies.

This paper focuses on the teaching and learning of specialised vocabulary through ICTs in general and, more precisely, on computer-supported teaching and learning of Maritime English (ME) vocabulary. Following the arguments

posed by Ruiz-Madrid and Sanz-Gil (2007: 65), we will use the term ICTs “to cover all the technological advances that are being applied in the field [of language learning]” and also when taking into account the possibilities afforded by technology for language teaching and lifelong learning; however, the classroom project presented in this paper is particularly focused on the implementation of “computer and network hardware and software” and, thus, expressions such as “computer-based”, “computer-assisted” or “computer-supported” will be used when referring to the ways ICTs have been integrated into the ME course.

In this paper we will address the challenges of ICT-based pedagogy to the ESP classroom in general, and the ME classroom in particular, by paying attention to (1) the potential contribution of ICTs for enhancing lifelong learning and nurturing autonomous self-directed learners, and (2) the relationship between technological courses and specialised vocabulary development. Then, we will examine the Moodle Glossary tool, a specific computer-based academic platform at the University virtual campus, and how it can be implemented in view of strategic ME vocabulary development.

## **ICT-BASED PEDAGOGY, LIFELONG LEARNING AND AUTONOMOUS LEARNERS**

Under the framework of the European Space for Higher Education (ESHE), action on lifelong learning is addressed through six key messages (Commission of the European Communities, 2000), number three being “Innovation in teaching and learning”. With the objective of developing effective teaching/learning methods and contexts in view of lifelong and lifewide learning, this key message highlights that ICT-based learning technologies have a prominent role in achieving innovation in teaching and learning methods as well as in enabling individuals to become active learners. More precisely, educational systems are encouraged to “adapt to the changing ways in which people live and learn their lives today” as well as “generate productive self-directed learning” (Commission of the European Communities, 2000: 14). In so doing, teachers are urged to face “decisive change in the coming decades: teachers and trainers become guides, mentors and mediators” (Commission of the European Communities, 2000: 14), and adapt to the rapidly changing educational contexts and promote active learners in view of lifelong learning.

As an educational construct, “lifelong learning” may also be labelled as “self-directed learning” or “autonomous learning”; however, the former implies a goal in the much longer term.

There is an upward trend of studies that explore the relationship ICTs/autonomy/ESP learning and both theoretical and quasi-experimental studies have been recently conducted to illustrate how ESP learners in specialised language settings can benefit from the implementation of ICTs for autonomy and self-direction. Devaux, Otterbach and Cheng (2006), for instance, explore how to use technology to facilitate effective learning and engender lifelong learners among a group of Asian students engaged in three different ESP/EAP courses. Trinder (2006) analyses the benefits of implementing the “autonomy perspective” among “English for Economics” students through the *Online English Mentor*, a web-delivered course. Ruiz-Madrid (2006) investigates the contribution of forums available at “Moodle” as “autonomising tools” for a group of “English for Computer Science” students, and, in another work (Ruiz-Madrid & Sanz-Gil, 2006) theorises over the integration of ICT in language learning in view of “autonomising competence”. Argüelles (2009) explores the possibilities and benefits of applying “Moodle” to a learner-centred “English for Professional Communication” context; and Bueno (2009) examines the possibilities of WebCT for “English for Agriculture” students and the effect of this platform on students and teachers alike.

Studies on ICTs as applied to ESP have flourished in the recent years and, particularly, the combination ICTs/autonomy/ESP arouses high expectations of promising research within the ESP arena. Nonetheless, despite the late proliferation of publications on this triple issue, there still is a dearth of real experimental research on the role and contribution of ICTs for self-directed learning in specialised language settings that helps to quantify and assess how much and to what extent ESP learners can benefit from technological classrooms.

## ICT-BASED PEDAGOGY AND SPECIALISED VOCABULARY

The vocabulary contained in academic and professional language (i.e. specialised vocabulary) may be classified into technical, sub-technical or semi-technical, and general (see Figure 1). Technical vocabulary is defined as “words that are very closely associated with a specialist area” (Nation & Chung, 2009: 545); or, more precisely, “content words whose meaning is restricted to the

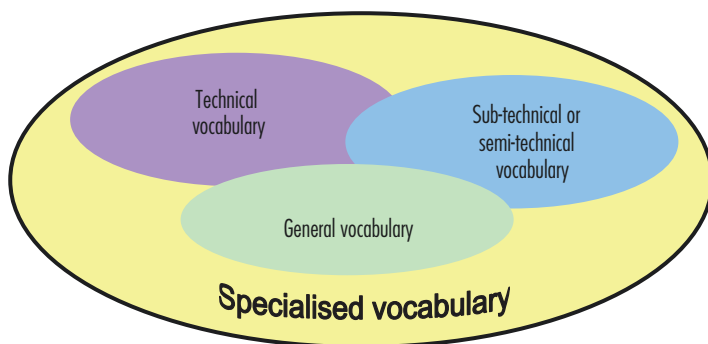


Figure 1. Classification of specialised vocabulary.

specific subject, characterizes the specific language as an individual area of the global language and constitutes the terminology of the domain” (Rea, 2009: 162). Sub-technical or semi-technical vocabulary is defined as “general content words whose meaning becomes specialized in a domain but it is understandable from its meaning in a general context” (Rea, 2009: 162). Finally, general vocabulary refers to those words that are known to the general speaker and coexist with technical and sub-technical vocabulary in a specialised text. Regardless any of these levels, words may display a high frequency or a low frequency in language use depending on the target piece of discourse – i.e. subject-matter, topic, register, mode, tenor, etc.

As far as the specialised vocabulary in maritime settings is concerned, Pritchard (2003: 157) classifies what he calls “Maritime English lexis” into five distinctive groups, the five of them being the focus of this paper as described later on:

- 1) “a very limited number (up to 7%) of strictly technical/nautical terms, whose central lexical meaning (...) is restricted to maritime use only and thus ‘unambiguous’ by nature”. Examples of these are: “starboard”, “hull”, “buoy” or “bow”;
- 2) “numerous semi-specific general vocabulary items, often highly polysemous, which are disambiguated in the maritime context only”. Examples of these are: “haul”, “overtake”, “position” or “fairway”;
- 3) “function words”, such as auxiliary verbs or prepositions, and “semi-lexical items”, such as verbs like “let” or “make”;

- 4) “an unlimited number of very productive multi-word lexical units consisting of the words of general vocabulary having specific meaning in the maritime context and setting”. These may be compound nouns such as “vessel traffic service” or “shipping forecast”, or prepositional/adverbial phrases of the type “heave in”, “heave on”, “heave up”, “heave to” or “heave away”;
- 5) “linguistic expressions of speech acts in maritime communication, discourse connectors and markers in maritime texts”. Examples of these are: “mayday” or “stand by”.

Turning to the issue of ICTs and taking into consideration effective vocabulary development, Pavičić (2008: 63) contends that thanks to computer learning programmes “learners can control and direct their learning, that is determine the pace of learning and the time devoted to one lexical item, as well as choose materials”; however, as research in the field of computer-based vocabulary learning reveals, learners are also required to become both active learners (i.e. invest time and effort) and strategic learners (i.e. apply how-to-learn skills or vocabulary learning strategies) if they want to be successful vocabulary learners. As Nation and Chung (2009: 552) point out, “computer-assisted vocabulary learning can be an effective way of getting help with vocabulary”. Based on published literature, these scholars stress the contribution of computers for language-focused learning and suggest five ways of implementing computers in vocabulary learning:

- 1) to include computer-based analysis of vocabulary and procedures for determining technical vocabulary;
- 2) to analyse texts for research and assessment purposes;
- 3) to include programs for the deliberate learning of vocabulary;
- 4) to use text-linked aids (e.g. concordances or electronic dictionaries) which support reading; and
- 5) to use word-processing tools for feedback on electronically submitted written work.

The ICT-based instruction detailed in this paper falls within the scope of the third possibility as it promotes language-focused learning through the implementation of vocabulary-learning strategies for deliberate and active learning.



## **METHODOLOGY AND RESULTS**

### **Setting and Participants**

The University of Cádiz (Spain) is actively promoting the participation of lecturers in projects for the implementation of the Bologna requirements and, as mentioned, this requires changes in the roles of both lecturers and students. Several steps have been taken to complement face-to-face classes with virtual instruction/learning integrating ICTs in the curriculum.

Students enrolled in the course *Nautical English*, the first compulsory English for Professional Purposes subject in their second year at University are the target of the activity discussed in this paper. In general, the students' level of proficiency in English varies from B1 to B2 levels of the Common European Framework of Reference for Languages (CEFR). The activity took place in the Spring semester of the 2009/10 academic year. Among the students who regularly attended class, twenty followed all the outside class activities – namely, the use of MarEng, a web-based maritime English language learning program, and of Moodle, a virtual learning environment.

Moodle is the course management system for the University's Virtual Campus. It is based on a socio-constructionist framework of education and provided as open source software. The Glossary is one of the many activity modules offered by Moodle. There are many interesting options to choose from the Glossary setup. However, the most attractive aspect is that it has a number of features that make it easy for students to develop a shared list of terms with definitions.

### **Implementing the Glossary Tool in the ME Course**

Based on our previous experience in the use of Vocabulary Learning Strategies (Perea, 2009), the chief aim of the activity was to see if the use of the Glossary increased specialized vocabulary retention among students of ME. There were also other objectives, namely, enhancing autonomy and cooperative learning, which happen to be the main focus of this paper. On the one hand, students participated in the creation of the Glossary by adding their own terms; we tried to promote their autonomy by letting them choose the terms and where to look for the information they needed, though some guidance was provided.

On the other hand, all the students worked together to create a final glossary of almost 400 specialized terms from the maritime field; this became a group work experience which helped boost cooperative learning. A printer-friendly version was made available for personal use.

First of all, we inserted the Glossary activity in our Virtual Campus course and placed it on the site front page. We gave it the descriptive name *Maritime Glossary*, indicated its purpose and provided instructions in the “Description” area (see figure 2). No duplicated entries were allowed. The teacher, as administrator of the glossary, could edit or delete any entry at any time. From the different display formats, we chose the “dictionary style”, which looks like an ordinary dictionary and entries can be ordered alphabetically or by the author’s name or surname.

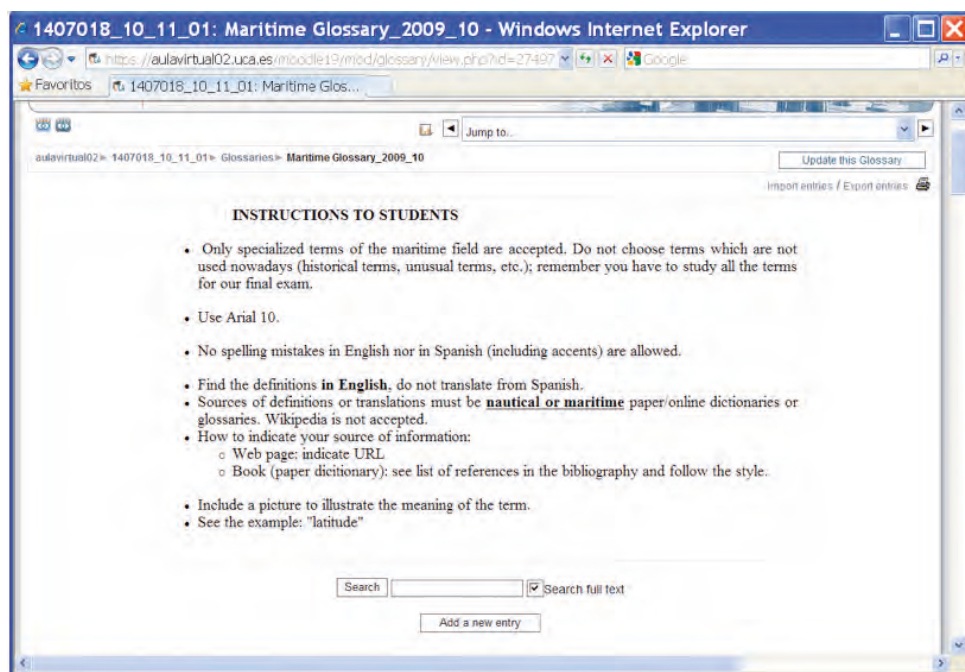


Figure 2. Glossary instructions.

Each glossary entry consisted of the maritime term, a definition in English, the translation into Spanish and a picture (see figure 3). Students were required to add, at different times during the whole semester, a total number of 15 terms.

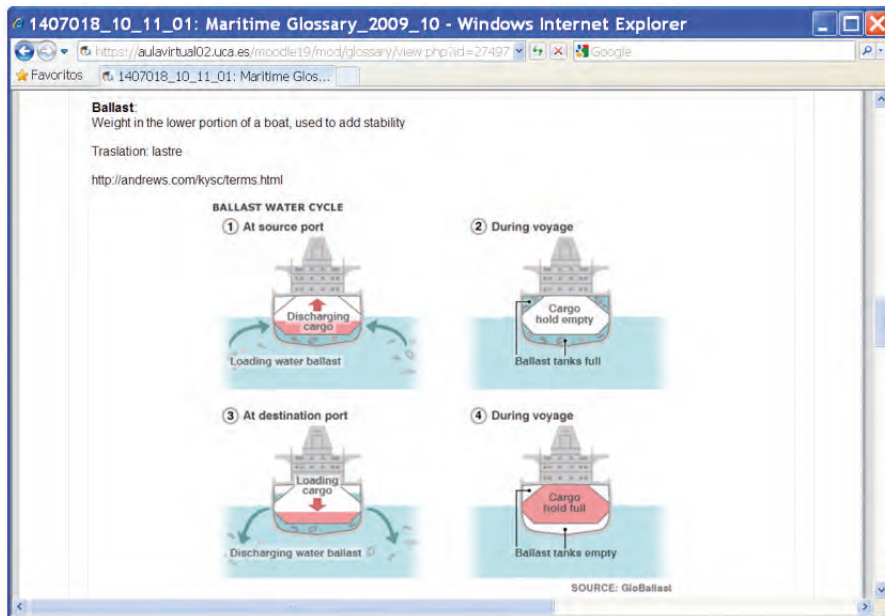


Figure 3. Glossary entry example.

## Students' Perceptions of the Glossary

At the end of the semester, a questionnaire with 12 items was handed out to the 20 students who had participated in the creation of the *Maritime Glossary* and had introduced all the required terms. The questions focused on the experience of the learners with the Glossary and their perceived usefulness. Questions 1 to 9 were closed and students had to choose from a number of answers; the last three questions were open and students could express their opinions more freely. In the following paragraphs, we will highlight some relevant data collected in the questionnaires.

The majority of students (75%) believe that adding entries to the Glossary, that is, choosing the term, looking for its definition, translation and picture, helped them retain the maritime vocabulary more successfully (see figure 4).

We also noted that the vast majority of students (85%) state that they drew on the final *Maritime Glossary* for the learning of specialized vocabulary (see figure 5). This indicates that creating a class Glossary is a collaborative work from which most students benefit.